



10/535071
T/AU03/01561

Rec'd PCT/PTO 12 MAY 2005

REC'D 15 DEC 2003

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I, LEANNE MYNOTT, MANAGER EXAMINATION SUPPORT AND
SALES hereby certify that annexed is a true copy of the Complete specification
in connection with Application No. 2002302105 for a patent by DAVID JOHN
TASKER as filed on 22 November 2002.



WITNESS my hand this
Tenth day of December 2003

LEANNE MYNOTT
MANAGER EXAMINATION SUPPORT
AND SALES

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AUSTRALIA
Patents Act 1990

**COMPLETE SPECIFICATION
STANDARD PATENT**

ENTIRELY REFLECTIVE LOUDSPEAKER ENCLOSURES

**The following statement is a full description of this
invention, including the best method of performing it
known to me:**

ENTIRELY REFLECTIVE LOUDSPEAKER ENCLOSURES

1. The invention relates to improvements in loudspeaker enclosures.

The entirely reflective loudspeaker enclosures design is for the propagation of reflected sound only. The design comprises a directive horn with transducer/s baffle panel toe-in and tilt or nil tilt and a rear reflective panel.

The contemporary loudspeaker enclosures are driven by analogue or digital formats from left and right outputs or multi-channel processor outputs of conventional reproduction equipment for indoor and outdoor purposes.

The majority of conventional loudspeakers radiate sound directly from transducer/s to the ear and a minority of loudspeakers radiate partly direct and partly reflected sound and have the disadvantage of not dispersing sound with uniform sound pressure level and therefore limiting the aural acoustic 'sweet spot' to an area of approximately one square metre.

The contemporary invention with sound entirely reflected from the enclosure rear panel, propagates uniform sound pressure level with the practical effect of widening the area in which a central soundstage image and depth of soundfield is perceived.

Another improvement is that it is possible for listeners to be as close as one metre to the loudspeaker enclosures.

The problems of low acoustic efficiency and low dynamic range are improved by the present invention which propagates sound from a directive horn which increases efficiency and dynamic range and enhances the sound of percussive musical instruments, such as piano, drums and cymbals for two channel and multi-channel surround sound and home theatre transient sound effects. Human auditory emotion is undeniably part of the acoustic experience. Bass soundwaves are felt and heard clearly at below eighty decibels, which is an effective acoustic improvement when compared to conventional inefficient, low dynamic loudspeakers.

Conventional loudspeaker enclosures disperse sound with irregular sound pressure levels, with narrow beam high frequencies and bass standing waves. The contemporary design with directive horn and enclosure rear reflective panel disperse sound away from side walls, floor and ceiling and therefore ameliorates the problems of echo and diffraction effects and also solves the problem of bass standing waves by dispersing a uniform sound pressure level. The acoustic improvements are aurally perceived advantageously at less than eighty decibels.

To assist in understanding the contemporary invention reference will now be made to the accompanying drawings which show four examples.

In the drawings:

Figures 1 to 8 comprising entirely reflective loudspeaker enclosures. Mirror image pair/s for specific left and right channels with transducer/s baffle panel a constant forty degree toe-in angle to the adjacent wall and the enclosure rear reflecting panel.

- 1 The enclosure rear reflecting panel shall be parallel to the adjacent wall. The transducer/s baffle panel tilt or nil tilt angle to the enclosure rear reflecting panel shall be dependant on the transducer/s height above floor level. Enclosures floorstanding or hung in open space shall have specifications substantially as in Figures 1 to 8.

5 These design features form a directive horn where sound is propagated, reflected and dispersed to a listening area. Enclosure separation shall be between two and seven metres and enclosures may be positioned next to a wall, or in room corners or floorstanding in open space or hung in open space.

- 10 (i) Figures 1 to 5 show floorstanding entirely reflective loudspeaker enclosures with rear reflective panel that shall be parallel to and within three centimetres to the adjacent wall. Enclosures with transducer/s height ten centimetres above floor level the transducer/s baffle panel uptilt angle shall be thirty degrees to the enclosure rear reflective panel. The transducer/s baffle panel tilt angle progressively reduces to
15 zero degrees, nil tilt to the enclosure rear reflective panel at transducer/s height one metre above floor level. The transducer/s baffle panel constant toe-in angle shall be forty degrees to the enclosure rear reflective panel.

- 20 (ii) Figure 6. Floorstanding tower type entirely reflective loudspeaker enclosures with rear reflective panel that shall be parallel to the adjacent wall. Enclosures with transducer/s height one metre to one metre, fifty centimetres above floor level the transducer/s baffle panel shall be zero degree, nil tilt, to the rear reflective panel. The transducer/s baffle panel constant toe-in angle shall be forty degrees to the rear
25 reflective panel.

- (iii) Figure 7. Wall mounted entirely reflective loudspeaker enclosures with rear reflective panel that shall be parallel to the adjacent wall. Enclosures with transducer/s height one metre to one metre, fifty centimetres above floor level, the
30 transducer/s baffle panel shall be zero degree, nil tilt to the rear reflective panel. The transducer/s baffle panel constant toe-in angle shall be forty degrees to the rear reflective panel.

- (iv) Figure 8. Wall mounted or hung, entirely reflective loudspeaker enclosures with rear reflective panel that shall be parallel to the adjacent wall and with the same
35 vertical and horizontal alignment if hung. Enclosures with transducer/s height one metre, fifty centimetres above floor level, the transducer/s baffle panel tilt angle to the rear reflective panel progressively increases from zero degree nil tilt, to thirty degrees downtilt with transducer/s height two metres, twenty centimetres above floor
40 level.

- Referring to Figure 8 all enclosures with transducer/s above two metres, twenty centimetres above floor level, the transducer/s baffle panel constant downtilt angle shall be thirty degrees to the enclosure rear reflective panel. The transducer/s baffle
45 panel constant toe-in angle shall be forty degrees to the enclosure rear reflective panel.

1 Referring to Figure 8 all enclosures with transducer/s above one metre, fifty centimetres above floor level, the loudspeaker enclosure/s upper and lower directive horn panels, panel 'A' and panel 'B' shall be exchanged one for the other (refer to Figures 5 and 8).

5 It shall be realised that the entirely reflective loudspeaker enclosures according to the invention are not restricted to flat panel enclosures and may in another form have curved panels with design features substantially the same as those described in (i), (ii), (iii), (iv) and drawings Figures 1 to 8.

10 The entirely reflective loudspeaker enclosures may be constructed of timber, plastic materials, metal or any other suitable material.

1 The claims defining the invention are as follows:

1. Entirely reflective loudspeaker enclosures, mirror image pair/s to propagate sound comprising a loudspeaker enclosure with a directive horn that faces the enclosure rear reflective panel which shall be parallel to an adjacent wall and for enclosures floorstanding or hanging in open space the rear reflecting panel shall be vertical and in line and facing the listening area and with the same alignment as herein described and the transducer/s baffle panel constant toe-in angle of all enclosures shall be forty degrees to the enclosure rear reflecting panel and the transducer/s baffle panel tilt or nil tilt angle to the rear reflective panel shall be dependant upon the transducer/s height above floor level and sound is reflected and dispersed with uniform sound pressure level in the listening area.
2. Floorstanding entirely reflective loudspeaker enclosures of claim 1 wherein with transducer/s height ten centimetres above floor level and the transducer/s baffle panel tilt angle to the enclosure rear reflective panel progressively decreases from thirty degrees up-tilt to zero degree nil tilt at transducer/s height one metre above floor level.
3. Floorstanding and wall mounted entirely reflective loudspeaker enclosures of claim 1 wherein with transducer/s height between one metre and one metre fifty centimetres above floor level the transducer/s baffle panel shall be nil tilt zero degree to the enclosure rear reflective panel.
4. Wall mounted or hung entirely reflective loudspeaker enclosures of claim 1 wherein with transducer/s height one metre fifty centimetres to two metres twenty centimetres above floor level the transducer/s baffle panel tilt angle progressively increases from zero degree to thirty degrees downtilt angle to the enclosure rear reflective panel and above two metres twenty centimetres above floor level the transducer/s baffle panel constant downtilt angle shall be thirty degrees to the rear reflective panel and all loudspeaker enclosures with transducer/s above one metre fifty centimetres above floor level the upper and lower directive horn panels shall be exchanged one for the other.
5. Entirely reflective loudspeaker enclosures substantially as herein described with reference to the accompanying drawings.

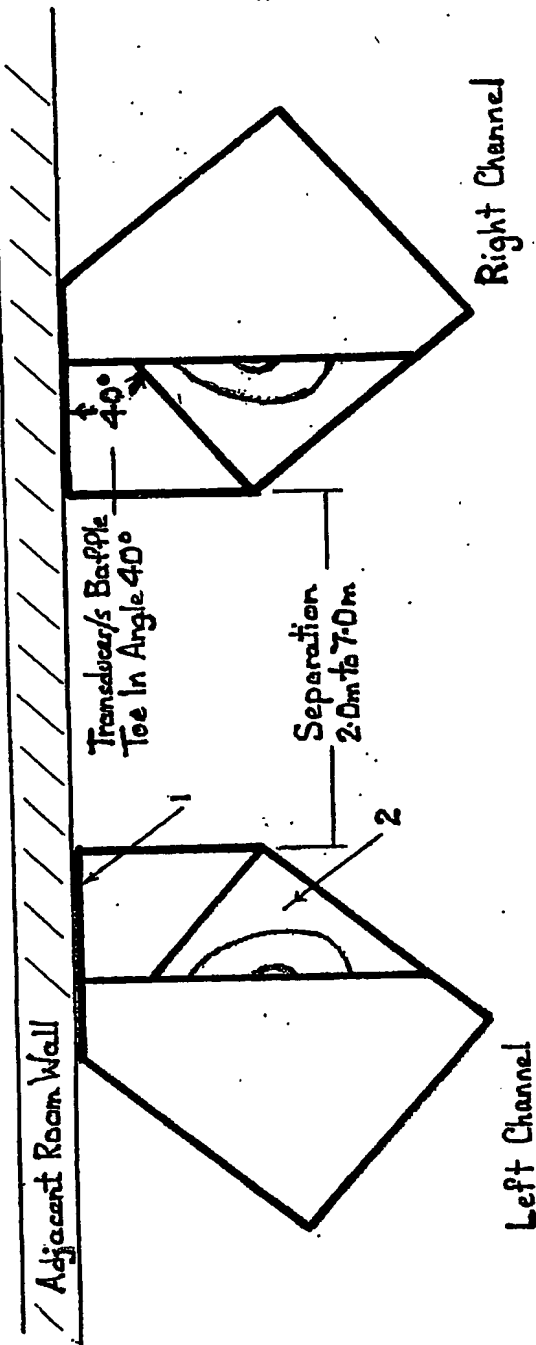


DAVID JOHN TASKER

22 NOVEMBER 2002

ABSTRACT

Entirely reflective loudspeaker enclosures as described in (i) (ii) (iii) (iv) and drawings Figures 1 to 8 are designed to propagate reproduced sound dynamically and with uniform sound pressure level. A directive horn in conjunction with transducer/s baffle toe-in and tilt or nil tilt directs sound to reflect off the loudspeaker enclosure rear panel and disperse into the listening area.



Room Floor

Floorstanding Enclosures
Mirror Image Pairs

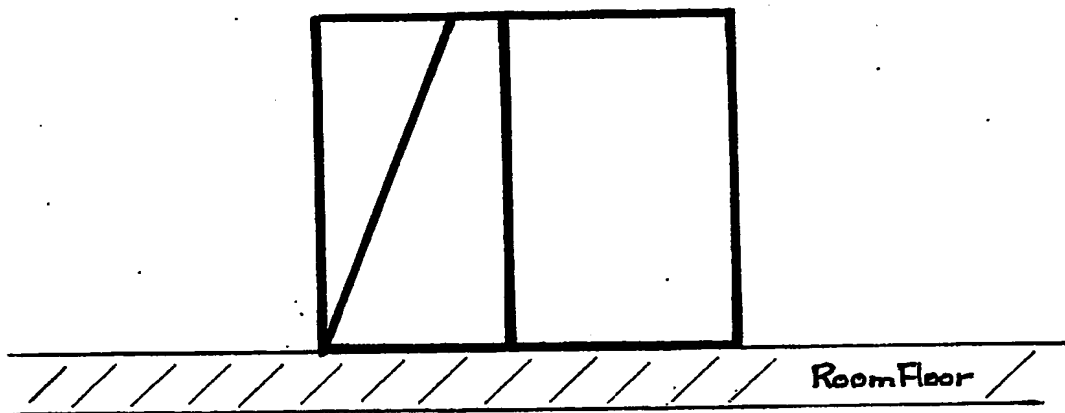
Figure 1.

— PLAN —

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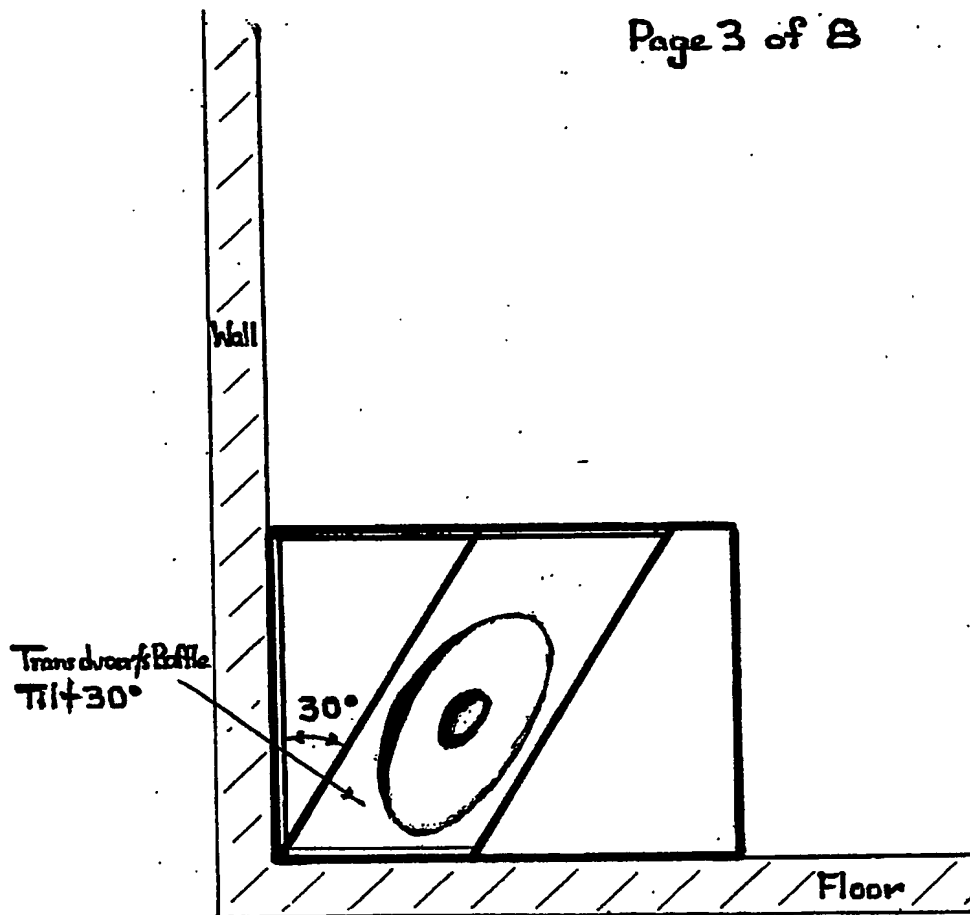
Adjacent Room Wall



Floorstanding Enclosure Right Channel

— FRONT ELEVATION — Figure 2.

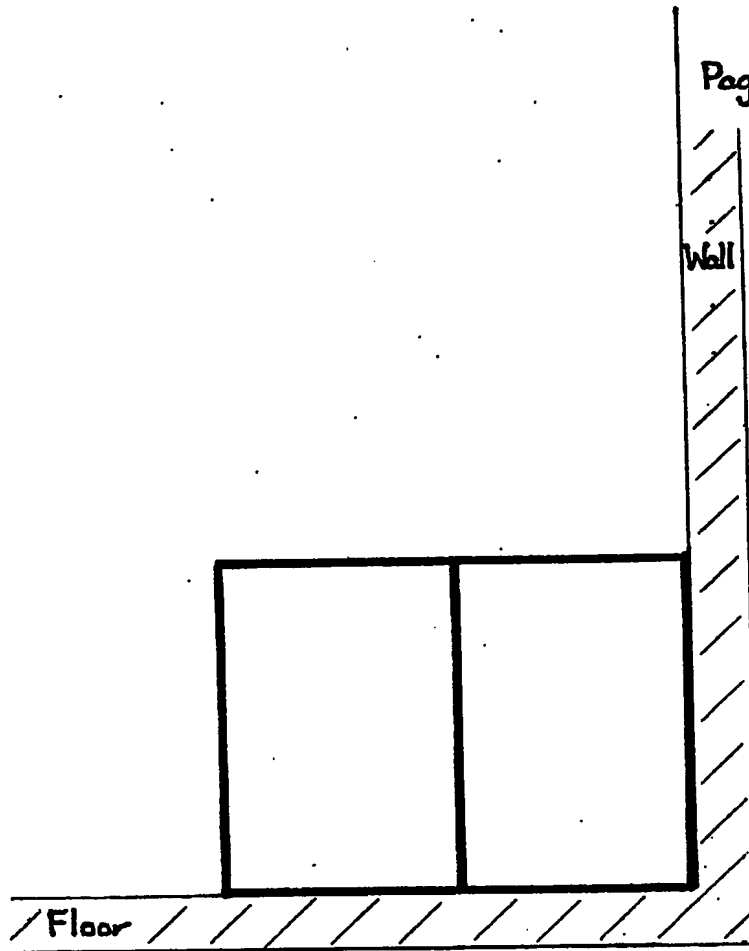
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— SIDE ELEVATION —
Floorstanding Enclosure - Right Channel

Figure 3.
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— SIDE ELEVATION —

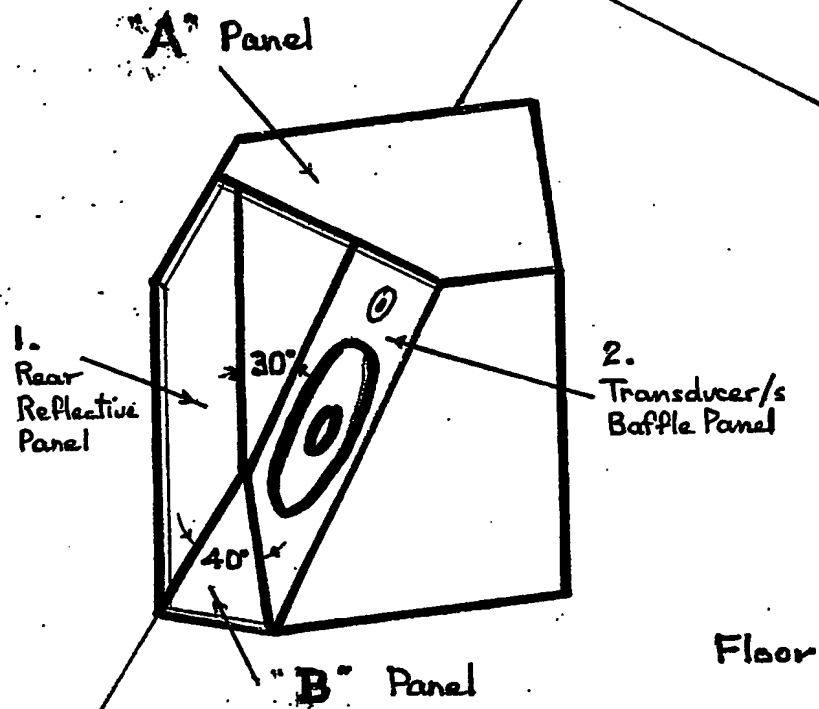
Floorstanding Enclosure
Right Channel

Figure 4.

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Room Wall

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— ANGLE ELEVATION —

Floorstanding Enclosure Right Channel

Figure 5.

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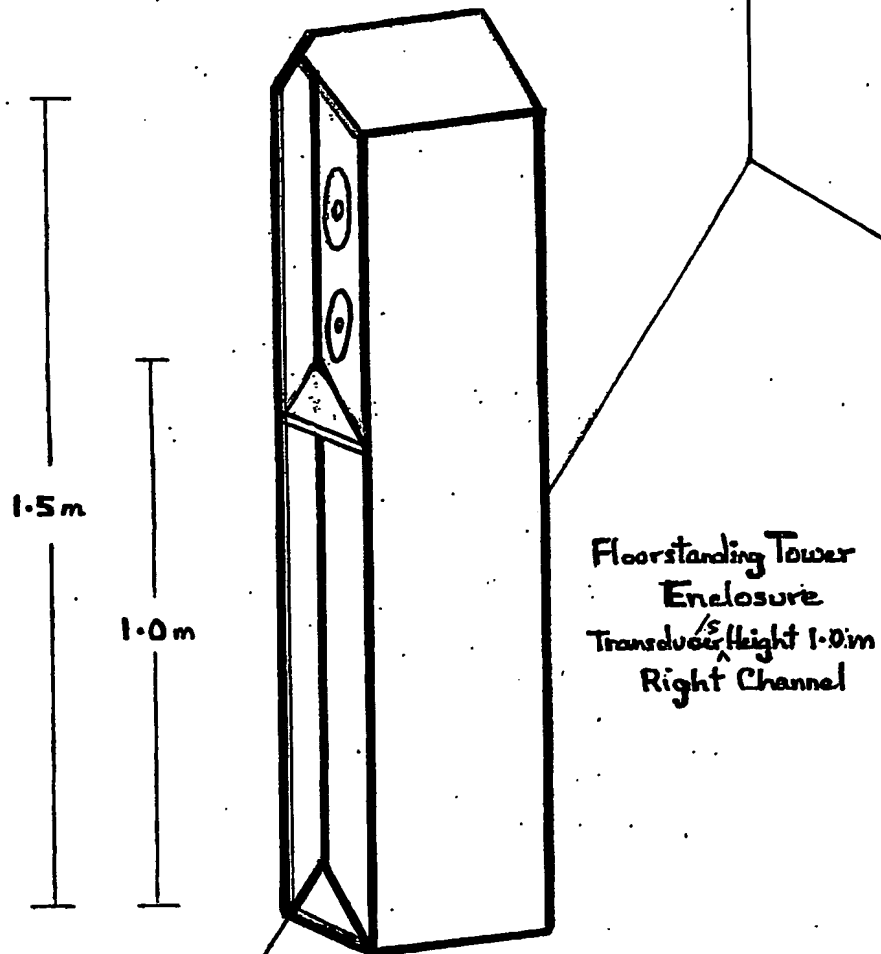


Figure 6.

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Wallmounted Enclosure
Right Channel
Transducer/s Height 1.0m

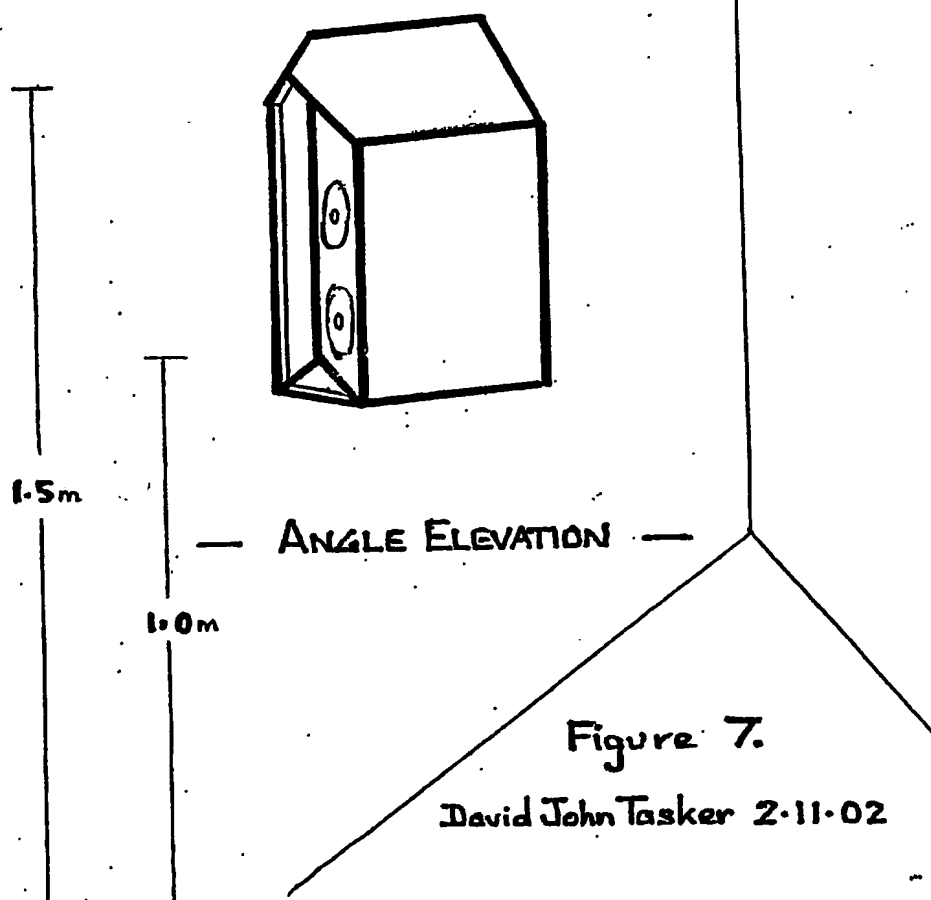
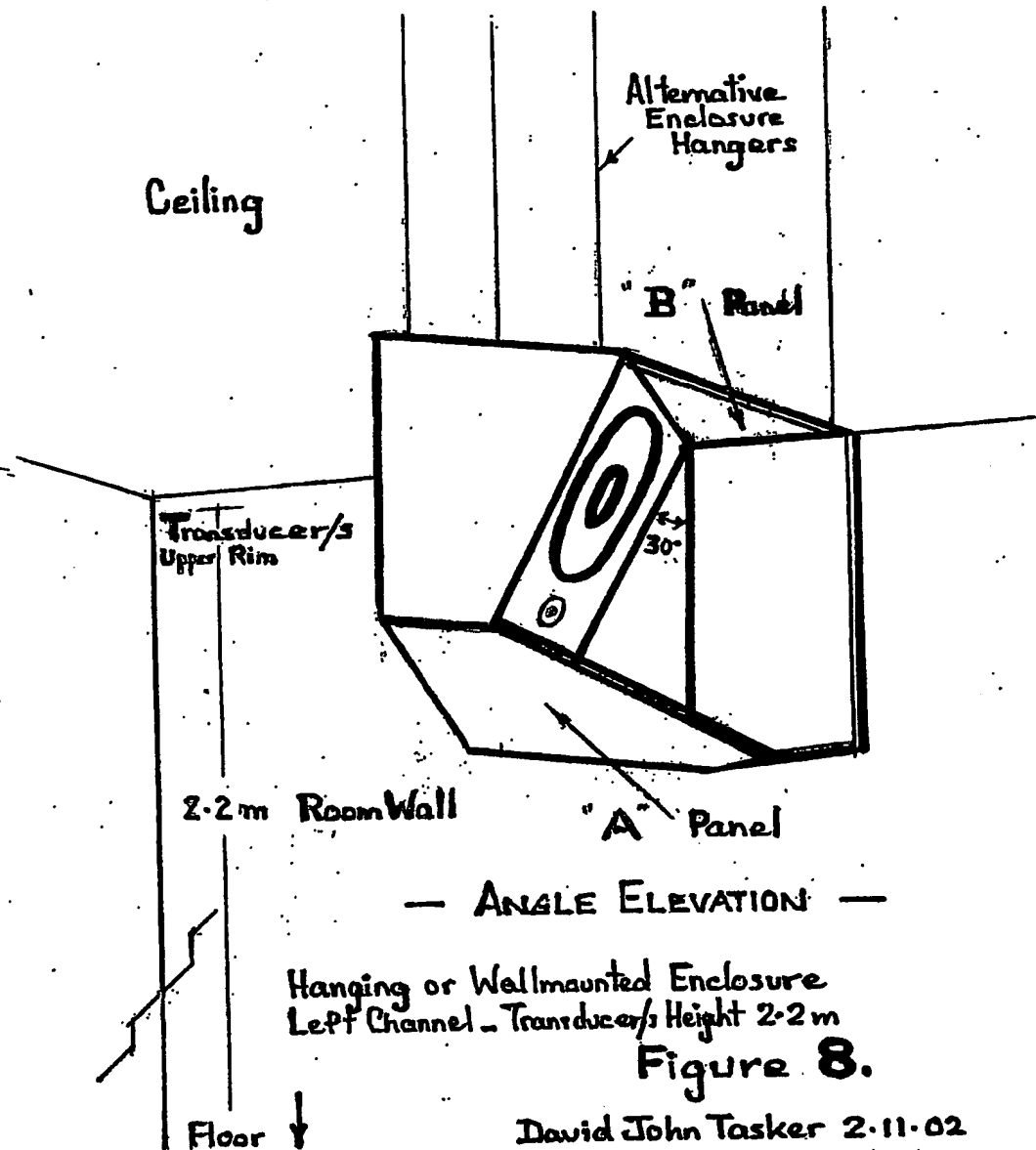


Figure 7.

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